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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,434	09/28/2001	Daniel F. Casper	POU920010154US1	6357

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Floyd A. Gonzalez
IBM Corporation
P386
2455 South Road
Poughkeepsie, NY 16201

EXAMINER

KNOLL, CLIFFORD H

ART UNIT	PAPER NUMBER
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2112

5

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,434

Applicant(s)

CASPER ET AL.

Examiner

Clifford H Knoll

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Bakke (US 6704812).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1, 9, 17, and 25, Bakke discloses a main memory for storing data and one or more I/O devices for receiving data from or sending data to the main memory (e.g., col. 2, line 67 – col. 3, line 4, col. 4, lines 30-33), control unit and I/O processor (e.g., col. 3, lines 29-31 establishes control), disparate channels between

said IOP and said control unit, each channel including multiple channel paths (e.g., col. 3, lines 4-5), a computer program executed by said IOP for assigning a path weight to certain channel paths whereby the next channel path to carry data between the main memory and I/O devices is selected (e.g., col. 3, lines 8-10, "each received command, selecting one...").

Regarding claims 2, 10, 18, and 26, Bakke also discloses disparate channels include more than one type of channel (e.g., Abstract, "...need not have the same protocol").

Regarding claims 3, 11, 19, and 27, Bakke also discloses one or more channel types (e.g., col. 1, lines 50-55).

Regarding claims 4, 12, 20, and 28, Bakke also discloses an algorithm for assigning a path weight to a channel path candidate dependent on the type of channel (e.g., col. 4, lines 11-12).

Regarding claims 5, 13, 21, and 29, Bakke also discloses selecting by round robin (e.g., col. 4, lines 57-59).

Regarding claims 6, 14, 22, and 30, Bakke also discloses channel busy data stored by each channel and a copy by the IOP and using the data in the busy data for assigning a weight (e.g., col. 4, lines 2-3).

Regarding claims 7, 15, 23, and 31, Bakke also discloses the classes of great candidate (e.g., col. 11, lines 55-58), bad candidate (e.g., col. 13, lines 31-34), or an OK candidate and selecting the OK candidate with the least path weight if there are not great candidates found (e.g., col. 11, lines 64-67).

Regarding claim 8, 16, 24, and 32, Bakke also discloses multiple IOPs each channel having an affinity to one IOP (e.g., col. 7, lines 36-40), a work queue having work elements for each IOP (e.g., col. 7, line 26), a loop for determining the best class of available candidates (e.g., col. 11, line 64 – col. 12, line 6) and from that class picking the candidate that has affinity to the IOP with the least number of work elements in its work queue (e.g., col. 4, lines 3-6).

Claims 1-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Blumenau (US 6574667).

Regarding claims 1, 9, 17, and 25, Blumenau discloses a main memory for storing data and one or more I/O devices for receiving data from or sending data to the main memory (e.g., col. 4, lines 13-15), control unit and I/O processor (e.g., col. 4, lines 27-29 establishes control), disparate channels between said IOP and said control unit, each channel including multiple channel paths (e.g., col. 5, lines 4-7), a computer program executed by said IOP for assigning a path weight to certain channel paths whereby the next channel path to carry data between the main memory and I/O devices is selected (e.g., col. 6, lines 35-38).

Regarding claims 2, 10, 18, and 26, Blumenau also discloses disparate channels include more than one type of channel (e.g., col. 5, lines 28-31).

Regarding claims 3, 11, 19, and 27, Blumenau also discloses one or more channel types (e.g., col. 5, lines 28-31).

Regarding claims 4, 12, 20, and 28, Blumenau also discloses an algorithm for assigning a path weight to a channel path candidate dependent on the type of channel (e.g., col. 16, lines 60-63).

Regarding claims 5, 13, 21, and 29, Blumenau also discloses selecting by round robin (e.g., col. 6, lines 35-38).

Regarding claims 6, 14, 22, and 30, Blumenau also discloses channel busy data stored by each channel and a copy by the IOP and using the data in the busy data for assigning a weight (e.g., col. 5, lines 54-57).

Regarding claims 7, 15, 23, and 31, Blumenau also discloses the classes of great candidate (e.g., col. 16, lines 60-63), bad candidate (e.g., col. 5, lines 54-57), or an OK candidate and selecting the OK candidate with the least path weight if there are no great candidates found (e.g., col. 5, lines 58-63).

Regarding claim 8, 16, 24, and 32, Blumenau also discloses multiple IOPs each channel having an affinity to one IOP (e.g., col. 5, lines 60-61), a loop for determining the best class of available candidates (col. 7, lines 64-66) and from that class picking the candidate that has affinity to the IOP (e.g., col. 5, lines 58-64) with the least number of work elements in its work queue (e.g., col. 6, lines 3-5).

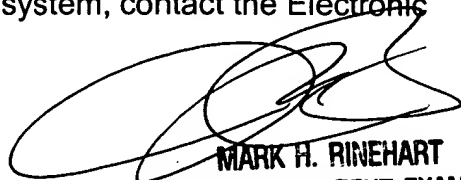
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chilton (US 6516390) discloses multiple disparate channels. Lee (US 2002/0147841) discloses multiple channels with weighting (e.g., paragraph [0062]). Applicant should also note Katz (US 2002/0018477) and Fujimoto (US 2003/0191892) which disclose similar teachings.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clifford H Knoll whose telephone number is 703-305-8656. The examiner can normally be reached on M-F 0630-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MARK H. RINEHART
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

chk